IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WENDEROTH et al	Atty. Ref.: **4372-8**
Serial No. **10/522,541**	Group: **1796**
Filed: **January 27, 2005**	Examiner: **Ogden, Jr.**

For: **GLYCOL-FREE AQUEOUS ANTIFREEZE COMPOSITIONS COMPRISING DICARBOXYLIC ACID SALTS**

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June 3, 2009

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPLICANTS' BRIEF ON APPEAL

Sir:

This Appeal is from the "final" Official Action dated November 3, 2008, rejecting claims 15 and 18-23, all of the claims now pending in this application.[1] As will become evident from the following discussion, the Examiner's rejections are in error and, as such, reversal of the same is solicited.

[1] The claims on appeal, which constitute all presently pending claims in this application, appear in the Section VIII Claims Appendix accompanying this Brief.

I. Real Party In Interest

The real party in interest is the owner of the subject application, namely BASF Aktiengesellschaft.

II. Related Appeals and Interferences

No known appeals and/or interferences related to this application are pending.

III. Status of Claims

A. The following claims are presently pending in this application: Claims 15 and 18-23.

B. The following claims are the claims on appeal and have been finally rejected in the Examiner's "final" Official Action of March 6, 2007: Claims 15 and 18-23.[2]

C. The following claims have been cancelled during prosecution to date: Claims 1-14, 16-17 and 24-28.

D. The following pending claim(s) have been allowed: None

E. The following pending claims have been withdrawn: None

F. The following pending claims have been objected to: None

[2] The rejections in the final Official Action dated November 3, 2008 in fact were advanced against then pending claims 15-23. However, as will be noted below in Section IV, an Amendment After Final Rejection was filed on February 2, 2009 wherein claims 16-17 were canceled and other pending claims amended. The February 2, 2009 amendment was entered into the Official Record by way of the Advisory Action dated February 11, 2009

IV. Status of Amendments

An Amendment After Final Rejection was filed on February 2, 2009. Entry of the Amendment was confirmed by way of the Advisory Action dated February 11, 2009.

V. Summary of Claimed Subject Matter[3]

The present invention as defined by independent claim 15 is directed toward an aqueous antifreeze composition (title of application as well as page 1, lines 8-9, for example) comprising 10 to 50% by weight of at least one alkali metal, ammonium or alkaline earth metal salt of a linear saturated aliphatic dicarboxylic acid having 4 to 12 carbon atoms (page 3, lines 26-30 and page 4, lines 25-27), at least one corrosion-inhibiting substance for aqueous coolants (page 3, lines 29-30 an page 4, line 4), and (a) 0.01 to 5% by weight of one more compounds from the group of aliphatic monocarboxylic acids having 3 to 16 carbon atoms in the form of their alkali metal, ammonium and substituted ammonium salts (page 5, lines 3-5).

[3] The numbers in parenthesis refer to page and line numbers of the originally filed specification.

VI. Grounds of Rejection to be Reviewed on Appeal

The following rejection was advanced in the final Official Action dated March 6, 2007:

Claims 15 and 18-23 stand rejected under 35 USC § 102(b) as allegedly anticipated by, or in the alternative, under 35 USC §103(a) as being obvious over WO '906 (WO 01/05906).

VII. Arguments

1. Claims 15 and 18-23 are patentable over WO '906

The Examiner has advanced a "final" rejection under 35 USC §102(b) as allegedly anticipated by or in the alternative under 35 USC §103(a) as obvious over WO '906. As will become evident from the following discussion, the Examiner's rejection of the pending claims herein is in error and must be reversed.

Prior pending claims 15-23 attracted a rejection under 35 USC §102(b) as allegedly anticipated by or in the alternative under 35 USC §103(a) as obvious over WO 01/05906 ("WO '906"). Applicants respectfully disagree.

The Examiner asserts that:

> "WO '906 discloses an aqueous heat transfer composition comprising carboxylic acid salts such as sebacic acid, 2-ethylhexanoic acid, tolytriazole and sodium hydroxide with said composition having a pH of 8 (see examples 3 and 4)."[4]

The Examiner then concludes that:

> "As [WO '906] teaches all of the instantly required it is considered anticipatory"[5]

As to the alleged anticipation of the pending claims, Applicants note that the ***only*** dicarboxylic acid component that appears to be disclosed in WO '906 is in fact sebacic acid. Moreover, this disclosure of ***di***carboxylic acid component appears in the Examples 1-4 of WO '906. However, sebacic acid is employed in very minor amounts,

[4] Official Action dated November 3, 2008 at page 2, paragraph 5.

[5] Official Action dated November 3, 2008 at page 2, paragraph 6.

i.e., an amount less than about 1 wt.% of the formulation, in each of the Examples as shown by the table below.

Content (g)	Ex. 1	Ex. 2	Ex 3	Ex. 4
H_2O*	725	890	1000	890
KOH	320	115	-	115
HCOOH*	335	134	-	134
2-ethylhexanoic acid	13	16.2	16.2	13
sebacic acid	1	1.26	1.26	1
tolytriazole	0.8	1.0	1.0	0.8
NaOH	4	4	4	4
Na propanoate	-	200	-	200
HCOOK	-	-	400	-
Sum ca.	1400	1360	1420	14.75
wt.% sebacic acid ca.	0.1	0.1	0.1	0.1

*calculated as liquid, i.e., sum of volumina = 1000ml

Thus, since the subject invention as defined by the pending claims herein requires the presence of 10 to 50 wt.% of at least one alkali metal, ammonium or alkaline earth metal salt of a linear saturated aliphatic dicarboxylic acid having 4 to 12 carbon atoms, WO '906 cannot possibly be an anticipatory reference under 35 USC §102(b) for at least this reason.

Nor can WO '906 render obvious the present invention under 35 USC §103(a). In this regard, as can be seen from Example 2 of WO '906, a composition is disclosed which includes a dicarboxylic acid, an aliphatic monocarboxylic acid as well as tolutriazole.

A principal difference between the subject matter of present claim 15 and W0 '906 is thus given in the ratios of the components (different main component, different ratio mono-/dicarboxylic acid). However, as can be seen from Table 2 on page 12 of the present application, corrosion tests were conducted using compositions of the present invention and a comparative composition according to Example 2 of WO '906 (see column 7). The appearance of the coolant after such test shows that the compositions of the present application give a clear appearance, whereas for the

comparative example according to WO '906 yields a cloudy appearance. Therefore, no suggestion is provided by WO '906 to use appropriate weight ratios so as to arrive at a solution as given in present claim 15.

In the Advisory Action, the Examiner noted that:

> "The prior art [of WO '906] continues to call out sebacic acid and ethylhexanoic acid along with corrosion inhibitors for the purpsoe (sic) of provind (sic) an antifreeze composition. Applicant fails to provide criticality commensurate in scope with the claimed invention."[6]

As noted previously however with respect to the erroneous rejection advanced under 35 USC §102(b), WO '906 actually teaches that a dicarboxylic acid, if employed at all, must be present in exceptionally small amounts as compared to that claimed herein. Thus, WO '906 actually teaches away from using dicarboxylic acids in the amounts between 10 to 50% by weight, at least one corrosion-inhibiting substance for aqueous coolants, and the claimed component (a), namely 0.01 to 5% by weight of one more compounds from the group of aliphatic monocarboxylic acids having 3 to 16 carbon atoms in the form of their alkali metal, ammonium and substituted ammonium salts.

2. Conclusion.

In view of the above, therefore, the subject matter of independent claim 15 and claims 18-23 dependent therefrom is both novel and unobvious over WO '906. Reversal of the Examiner's rejection based thereon is therefore in order. Such favorable action is solicited.

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[6] Advisory Action dated February 11, 2009, paragraph 11.

3. Fee Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1.–14. (canceled)

15. (previously presented) An aqueous antifreeze composition comprising 10 to 50% by weight of at least one alkali metal, ammonium or alkaline earth metal salt of a linear saturated aliphatic dicarboxylic acid having 4 to 12 carbon atoms, at least one corrosion-inhibiting substance for aqueous coolants, and
    (a) 0.01 to 5% by weight of one more compounds from the group of aliphatic monocarboxylic acids having 3 to 16 carbon atoms in the form of their alkali metal, ammonium and substituted ammonium salts.

16. (canceled)

17. (canceled)

18. (previously presented) An antifreeze composition as claimed in claim 15, wherein the salt is a sodium or potassium salt, an ammonium, trialkylamine or trialkanolamine salt.

19. (previously presented) An antifreeze composition as claimed in claim 15, wherein the composition further comprises one or more compounds from the groups listed b) through h) below:
    b) 0.01 to 5% by weight of one or more compounds from the group of aliphatic and aromatic di- and tricarboxylic acids each having 3 to 21 carbon atoms in the form of their alkali metal, ammonium and substituted ammonium salts, where, in cases where a dicarboxylic acid is used, this is different from the dicarboxylic acid used as antifreeze composition.
    c) 0 to 1% by weight of one or more compounds from the group of alkali metal borates, alkali metal phosphates, alkali metal silicates, alkali metal

nitrites, alkali metal and alkaline earth metal nitrates, molybdates and alkali metal and alkaline earth metal fluorides;

d) 0 to 1% by weight of one or more compounds from the group of hard-water stabilizers based on polyacrylic acid, polymaleic acid, acrylic acid-maleic acid copolymers, polyvinylpyrrolidone, polyvinylimidazole, vinylpyrrolidone-vinylimidazole copolymers and copolymers of unsaturated carboxylic acids and olefins;

e) 0.01 to 5% by weight of one or more compounds from the group of carboxamides and sulfonamides;

f) 0.01 to 5% by weight of one or more compounds from the group of mono- and binuclear unsaturated and partially unsaturated heterocycles having 4 to 10 carbon atoms, which may be benzo-fused or carry additional functional groups;

g) 0.01 to 5% by weight of one or more compounds from the group of tetra(C_1-C_8-alkoxy)silanes (orthosilicic acid tetra-C_1-C_8-alkyl esters);

h) 0.01 to 5% by weight of one or more compounds from the group of aliphatic, cycloaliphatic and aromatic amines having 2 to 15 carbon atoms which may additionally contain ether oxygen atoms or hydroxyl groups.

20. (previously presented) An antifreeze composition as claimed in claim 19, wherein the composition comprises a combination of one or more substances from the groups a), b), c), d) and/or f).

21. (previously presented) An antifreeze composition as claimed in claim 20, wherein the composition comprises a combination of one or more substances from groups a), b), c) and f), wherein

a) is 2-ethylhexanoic acid, p-hydroxybenzoic acid, benzoic acid, or isononanoic acid,

b) is sebacic acid or dodecanedicarboxylic acid,

c) is sodium molybdate [[and]] or sodium metasilicate, and
f) is tolutriazole, benzotriazole or 1H-1,2,4-triazole.

22. (previously presented) An antifreeze composition as claimed in claim 15, wherein the composition pH is in the range from 6 to 11.

23. (previously presented) An antifreeze composition as claimed in claim 15, which comprises less than 10% by weight of ethylene glycol, propylene glycol, polyethylene glycols and/or polypropylene glycols having 2 to 15 glycol ether units.

24 - 28. (Canceled).

IX. EVIDENCE APPENDIX

[NONE]

X. RELATED PROCEEDINGS APPENDIX

[NONE]